



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,713	01/22/2007	Alwyn John Seeds	ZIN-001	6908

51414 7590 07/10/2009

GOODWIN PROCTER LLP  
PATENT ADMINISTRATOR  
53 STATE STREET  
EXCHANGE PLACE  
BOSTON, MA 02109-2881

EXAMINER
----------

DOBSON, DANIEL G

ART UNIT	PAPER NUMBER
----------	--------------

2613

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

07/10/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PatentBos@goodwinprocter.com  
hmcpeake@goodwinprocter.com  
glenn.williams@goodwinprocter.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/538,713	<b>Applicant(s)</b> SEEDS ET AL.	
	<b>Examiner</b> DANIEL G. DOBSON	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12/09/2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/10/2005; 03/22/2007; 06/07/2007; 06/07/2007;</u>           | 6) <input type="checkbox"/> Other: _____                          |
| <u>02/19/2008; 08/15/2008; 02/03/2009.</u>   |   |



## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement filed 03/22/2007 (regarding references C4-C7 and C11) fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because no date is provided. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,525,853 B1 to Stuart and U.S. Patent 6,064,786 to Cunningham et al.

As to **Claim 14**, *Stuart* discloses a method of reducing signal loss in an optical signal transmission system using a multimode optical fibre (Fig. 3, Col. 2, ll. 5-13), the method comprising:

coupling a signal into the multimode optical fibre (Fig. 3, signal from transmitters (36 1-n) is coupled into multimode fiber (40)),

wherein the signal is a radio-frequency-modulated signal (Fig. 3, RF modulated signals intensity modulate transmitters (36 1-n.))

*Stuart* suggests altering the mechanical positioning of the lasers and coupling optics when channel characteristics are undesirable (Col. 4, l. 61 - Col. 5, l. 5); however *Stuart* does not expressly disclose using a launch at an offset from the fibre.

*Cunningham* discloses launching a signal at an offset from the fiber (Fig. 1, launch at (20) offset by X.)

*Stuart* and *Cunningham* are from the same art with respect to optical communication, and are therefore analogous art.

At the time of the invention, it would have been obvious for a person of ordinary skill in the art to launch at an offset from the fibre as disclosed by *Cunningham* in the system disclosed by *Stuart* the suggestion/motivation would have been to simultaneously enhance the bandwidth and modal noise performance of a multimode optical fibre communication system (Col. 3, ll. 45-50.)

As to **Claim 15**, *Cunningham* discloses wherein the launch is collinear with an axis of the multimode fibre (Fig. 10.)

The suggestion/motivation is the same as that used in the rejection for claim 14.

As to **Claim 16**, *Cunningham* discloses wherein the signal is provided by a transverse mode laser transmitter (Col. 8, l. 49.)

The suggestion/motivation is the same as that used in the rejection for claim 14.

As to **Claim 17**, *Cunningham* discloses wherein the launch comprises a single transverse mode laser (Col. 8, l. 49) coupled to a single mode fibre pigtail (Fig. 9, 2) in communication with a GRIN multimode fibre (Fig. 9, 6, Col. 7, ll. 20-25) using a mode-conditioning patchcord (Fig. 9, 2.)

The suggestion/motivation is the same as that used in the rejection for claim 14.

As to **Claim 18**, *Cunningham* discloses a laser receptacle package (Fig. 9, 2) coupled to a GRIN multimode fibre (Fig. 9, 6, Col. 7, ll. 20-25) where the axis of the optical output from a single transverse mode laser (Col. 8, l. 49) has been offset from that of the fibre (Col. 7, ll. 18-20.)

The suggestion/motivation is the same as that used in the rejection for claim 14.

As to **Claim 19**, *Cunningham* discloses wherein the multimode fibre has a core diameter of 62.5  $\mu\text{m}$  (Col. 7, ll. 12) and wherein the coupling step comprises using a launch having an offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter of approximately 10  $\mu\text{m}$  to approximately 30  $\mu\text{m}$  (Fig's. 4 and 5 show

Art Unit: 2613

that the offset can be changed as desired and includes the range from 10 um to 30 um.)

The suggestion/motivation is the same as that used in the rejection for claim 14.

As to **Claim 20**, *Cunningham* discloses where the offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter is approximately 23 um to approximately 30 um (Fig's. 4 and 5 show that the offset can be changed as desired and includes the range from 23 um to 30 um.)

The suggestion/motivation is the same as that used in the rejection for claim 14.

As to **Claim 21**, *Cunningham* discloses wherein the multimode fiber is installed in a building (Col. 1, l. 18.)

The suggestion/motivation is the same as that used in the rejection for claim 14.

As to **Claim 22**, *Stuart* discloses a radio frequency optical communication system (Fig. 3, Col. 2, ll. 5-13) comprising:

- a multimode optical fibre (Fig. 3, 40);

- a laser transmitter (Fig. 3, 36-1) having an input port (Fig. 3, input port on left for RF modulated data) for causing the laser transmitter to provide radio-frequency modulated optical signals to said fibre (Fig. 3, RF modulated data modulates the transmitter 36-1, Col. 4, ll. 15-20); and

a coupler between the laser transmitter and the fibre (Fig. 3, 38, optics for coupling the optical signal onto one multimode fiber.)

*Stuart* suggests altering the mechanical positioning of the lasers and coupling optics when channel characteristics are undesirable (Col. 4, l. 61 - Col. 5, l. 5); however *Stuart* does not expressly disclose that the coupler has an offset from the fibre axis.

*Cunningham* discloses using a coupler (Fig. 9, 2) to launch a signal at an offset from the fiber axis (Col. 7, ll. 18-20.)

*Stuart* and *Cunningham* are from the same art with respect to optical communication, and are therefore analogous art.

At the time of the invention, it would have been obvious for a person of ordinary skill in the art to use a coupler to launch at an offset from the fibre axis as disclosed by *Cunningham* in the system disclosed by *Stuart* the suggestion/motivation would have been to simultaneously enhance the bandwidth and modal noise performance of a multimode optical fibre communication system (Col. 3, ll. 45-50.)

As to **Claim 23**, *Cunningham* discloses wherein the transmitter is a transverse mode laser transmitter (Col. 8, l. 49.)

The suggestion/motivation is the same as that used in the rejection for claim 22.

As to **Claim 24**, *Cunningham* discloses wherein the launch restricts the number of modes excited in the fibre (Col. 3, ll. 35-7.)



The suggestion/motivation is the same as that used in the rejection for claim 22.

As to **Claim 25**, *Cunningham* discloses wherein the launch is collinear with an axis of the multimode fibre (Fig. 10.)

The suggestion/motivation is the same as that used in the rejection for claim 23.

As to **Claim 26**, *Stuart* discloses a photodetector (Fig. 3, 42-1.)

As to **Claim 27**, *Stuart* discloses a demodulator for demodulating the output of the photodetector (Fig. 3, 44.)

As to **Claim 28**, *Cunningham* discloses wherein the multimode fibre has a core diameter of 62.5  $\mu\text{m}$  (Col. 7, ll. 12) and wherein the coupling step comprises using a launch having an offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter of approximately 10  $\mu\text{m}$  to approximately 30  $\mu\text{m}$  (Fig's. 4 and 5 show that the offset can be changed as desired and includes the range from 10  $\mu\text{m}$  to 30  $\mu\text{m}$ .)

The suggestion/motivation is the same as that used in the rejection for claim 23.

As to **Claim 29**, *Cunningham* discloses where the offset distance measured from the centre of the multimode fibre core to the centre of the optical radiation emitted from the transmitter is approximately 23  $\mu\text{m}$  to approximately 30

um (Fig's. 4 and 5 show that the offset can be changed as desired and includes the range from 23 um to 30 um.)

The suggestion/motivation is the same as that used in the rejection for claim 23.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. DOBSON whose telephone number is (571)272-9781. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/538,713  
Art Unit: 2613

Page 9

/Daniel G. Dobson/  
Examiner, Art Unit 2613  
07/01/2009

/Kenneth N Vanderpuye/  
Supervisory Patent Examiner, Art Unit 2613